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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,484	01/10/2002	Mitsuru Sugino	S004-4374	8046
7590	03/21/2005		EXAMINER	
Adams & Wilks 31st Floor 50 Broadway New York, NY 10004			DI GRAZIO, JEANNE A	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/914,484	<b>Applicant(s)</b> SUGINOYA, MITSURU	
	<b>Examiner</b> Jeanne A. Di Grazio	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Elec. 12/08/2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 5-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

Priority to Japanese Patent Application No. 11-054602 (March 2, 1999) is claimed.

### *Election/Restrictions*

Applicant's election without traverse of Species A, claims 1-4 and 11-22 readable upon Species A in the reply filed on 28 December 2004 is acknowledged.

Please note, however, that newly added claims 11-18 read on non-elected Species B, Figures 5 and 6, drawn to a manufacturing method of a liquid crystal display unit manufactured by a polymeric substrate comprising a patterning process for forming transparent electrode patterns on the polymeric substrate and wherein a buffer of the polymeric substrate is arranged within the patterning process or between the patterning process and vertical orientation film forming process.

As such, claims 11-18 are withdrawn.

Claims 5-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 28 December 2004.

Claims 1-4 and 19-22 remain pending are the subject of the instant Office Action.

### *Drawings*

Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

Claim 1 is objected to because of the following informalities:

As to claim 1, the limitation "wherein the polymeric substrate is continuously moved in the longitudinal direction during the vertical orientation film forming process and the solidifying process" is not clear.

The limitation is unclear because the motion of the substrate is not made relative to anything. Please note, it is respectfully pointed out, that everything moves to some extent – motion of a given object may be the result of any number of factors, for example, thermal expansion, (2) vibrational motion and/or (3) the Earth's rotation. Motion must be defined relative to something else.

For examination purposes, the limitation is presumed to read on the currently applied art of record.

Appropriate correction is **required**.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-4 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 2, the limitations of claim 2 contradict the limitations of base claim 1 from which claim 2 depends. Specifically, claim 1 calls for a vertical orientation film forming process and then a solidifying process. Claim 2 calls for an orientation film forming process “for prescribing the falling direction of a liquid crystal molecules” after a solidifying process. Applicant is claiming a manufacturing method of a vertical orientation film. Thus, the “falling direction” is taken to mean a vertical falling direction (i.e., a vertically aligned (VA) mode film).

Claim 2 can be interpreted in different ways. First, that the vertical orientation process is achieved after the solidifying process (contradicts claim 1). Second, that the orientation process is not necessarily VA mode. Third, that there may be multiple orientation forming processes.

Claims 3-4 and 19-21 are dependent either directly or indirectly upon rejected claim 2 and are therefore rendered indefinite by virtue of their dependence on rejected claim 2.

Please note further that claims 19-21 are device limitations in method claims and are further rendered indefinite for failing to affect the method in a manipulative sense.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) Figure 7 in view of United States Patent 5,917,569 (to Tanuma et al.).

As to claim 1, APA Figure 7 and Specification at pages 1-5 teach and disclose a conventional Super Twisted Nematic liquid crystal display unit and a conventional manufacturing method.

APA discloses polymeric substrates (21 and 24), transparent substrate 22 and transparent electrode 25 upon which are formed orientation films (23 and 26). Continuing the discussion of conventional art, the Specification teaches that an orientation film solidifying process and an orientation process can be continuously performed by using the polymeric substrate (with reference to the conventional manufacturing method)(SPEC p. 2, lines 18-23).

APA does not appear to explicitly specify that the orientation film is vertically aligned (VA) and that the substrate moves (Please see Objection noted above with regard to claim 1).

However, Tanuma teaches and discloses an LCD with particular rubbing techniques and having different anchoring energies between pixel and non-pixel regions (Title, entire patent).

In Tanuma, alignment film (at least 25A) is rubbed to impart a vertical alignment mode to the liquid crystal molecules (See Figure 11b, circle magnifying the liquid crystal molecular

orientation as vertically aligned). A substrate is furthermore moved (See Figures 12 and 17) (Please see Objection noted above with regard to claim 1).

Tanuma teaches and discloses that rubbing of an alignment film and substrate speed are at least two factors that affect light transmittance, operating voltage and anchoring energy (Column 7, Lines 52-67).

Tanuma is evidence that ordinary workers in the field of liquid crystals would have found the reason, suggestion and motivation to select a vertically aligned alignment film and moving substrate relative to the rubbing of the vertically aligned film for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify APA in view of Tanuma for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67).

As to claim 2, Tanuma features multiple orientation film alignment processes.

As to claim 3, Tanuma features illumination by ultraviolet light (Figure 20b).

As to claim 4, Tanuma features alignment by rubbing (entire patent) along the length of the substrate (entire patent).

As to claims 19-22, a polyimide is used as a material for first and second alignment films (Tanuma, Column 20, first example, lines 53-56).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289.

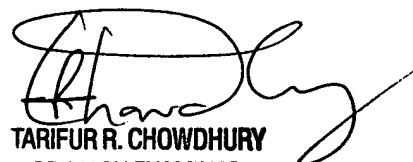
The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio  
Patent Examiner  
Art Unit 2871

JDG



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER